



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/528,906

02/10/2006

Carlos A Fenny

0837RF-H444-US

9035

38441

7590

03/21/2008

LAW OFFICES OF JAMES E. WALTON, PLLC
1169 N. BURLESON BLVD.
SUITE 107-328
BURLESON, TX 76028

EXAMINER

O'HARA, BRIAN M

ART UNIT

PAPER NUMBER

4136

MAIL DATE

DELIVERY MODE

03/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,906	Applicant(s) FENNY ET AL.	
	Examiner Brian M. O'Hara	Art Unit 4136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-11, 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 12-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/18/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claims 2 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.** The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear how the 'cyclic output' is changed by the stepped mixing linkage. A cyclic is used for pilot inputs into the mechanism.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Edenborough (US Patent 3,228,478).** Edenborough discloses the control system described in Claim 1, including: a cyclic (12), a torque tube (Column 6, Line 25-29), a forward-aft output link (19, 40), a stepped mixing linkage (Fig. 2), a ground link (32 and 34), a lateral output link (40), a

left-right output link (19), where in the control system generates a ramped output (Fig. 6 and 7).

In regard to claim 15, Edenborough discloses a linkage which could be applied to an existing rotorcraft having the same properties listed in claim 1 (See Fig. 1 and 2).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Edenborough in view of Bossler et al. (US Patent 3,217,809). Edenborough discloses a control system for a rotorcraft with a stepped mixing linkage, but does not disclose a left lateral output in response to a forward cyclic input, or a right lateral output in response to an aft cyclic input.

Bossler et al. discloses a mechanism for introduction of a slight amount of lateral cyclic pitch change with changes in collective pitch to counteract cross-coupling (Column 1, Line 32-45). At the time of invention, it would have been obvious to a person of ordinary skill in this art to provide a cross-coupling eliminating mechanism in the stepped mixing linkage as disclosed by Edenborough in view of the teachings of Bossler et al. The motivation for doing so would have been to provide better controls for a rotorcraft.

7. **Claims 3, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Edenborough in view of Kastan (US Patent 4,025,230). Edenborough discloses a control system with a mixing linkage as described above, but does not disclose the use of two supporting links pivotally coupled to the torque tube with a small ratio between the lengths of the two supporting links to the length of the floating link. Kastan discloses the use of two supporting

Art Unit: 4136

links pivotally coupled to a floating link for use in a stepped mixing linkage where the ratio of lengths of the supporting links to the length of the floating link is small (92, 94, 95). At the time of invention, it would have been obvious to a person of ordinary skill in this art to provide a stepped mixing linkage with the above described Watts linkage as disclosed by Edenborough in view of the teachings of Kastan. The motivation for doing so would have been to provide better controls for the rotorcraft.

8. **Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edenborough in view of Cresap (US Patent 3,118,504).** Edenborough discloses the control system described in Claim 1, including: a cyclic (12), a torque tube (Column 6, Line 25-29), a forward-aft output link (19, 40), a stepped mixing linkage (Fig. 2), a ground link (32 and 34), a lateral output link (40), a left-right output link (19), where in the control system generates a ramped output (Fig. 6 and 7) but does not disclose a rotorcraft with the above control system. Cresap discloses the use of a similar control system for use in a rotorcraft (see Fig. 6). At the time of invention, it would have been obvious to a person of ordinary skill in this art to provide a rotorcraft that was suitable to use the control system as disclosed by Edenborough in view of the teachings of Cresap. The motivation for doing so would be to make use of the control system.

9. **Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edenborough in and Cresap (US Patent 3,118,504) as applied to claim 9 above, and further in view of Kastan (US Patent 4,025,230).** The combination of Edenborough and Cresap discloses a control system with a mixing linkage as described above, but does not disclose the use of two supporting links pivotally coupled to the torque tube with a small ratio between the lengths of the two supporting links to the length of the floating link. Kastan discloses the use of

Art Unit: 4136

two supporting links pivotally coupled to a floating link for use in a stepped mixing linkage where the ratio of lengths of the supporting links to the length of the floating link is small (92, 94, 95). At the time of invention, it would have been obvious to a person of ordinary skill in this art to provide a stepped mixing linkage with the above described Watts linkage as disclosed by Edenborough in view of the teachings of Kastan. The motivation for doing so would have been to provide better controls for the rotorcraft.

Allowable Subject Matter

10. Claims 4-6 and 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian M. O'Hara whose telephone number is (571)270-5224.

The examiner can normally be reached on compressed 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James A. Shriver can be reached on (571)272-6698. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 4136

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian M O'Hara/
Examiner, Art Unit 4136

/J. Allen Shriver/
Supervisory Patent Examiner, Art Unit 4136